confining its growth locally, and the other early giving rise to metastases. In these respects, as in many others, the similarity in nature between mouse-cancer and cancer in man is placed on a firm basis, and the importance of experimental cancer research in relation to human cancer established.

Experimental research continues to throw discredit on the hypothesis that cancer is caused by a specific parasite.

NOTES.

It is announced that the Admiralty has accepted a tender for the construction of a large laboratory, which is to be built on the high land at Crombie and used for purposes of chemical research in connection with the ordnance works there.

Prof. W. A. Bone, F.R.S., has been awarded the Howard N. Potts gold medal for distinguished work in science or the mechanic arts by the Franklin Institute of Philadelphia, in recognition of his work upon surface combustion. Prof. Bone lectured before the institute upon this subject in October, 1911.

The King decorated the members of the British Antarctic Expedition on July 26 with the Antarctic medal and clasp. The medals and clasps awarded to those who lost their lives were presented by the King to the widows, and in other cases to the mothers. Chief Stoker W. Lashley, R.N., and Petty Officer T. Crean, R.N., were decorated also with the Albert Medal of the Second Class for gallant conduct in connection with the heroic saving of the life of Commander Evans, with the details of which readers of Nature are already familiar.

A correspondent of *The Birkenhead News* directs attention to the submerged forest at Leasowe, lying north-west of that city. Numerous relics, including coins, have from time to time been discovered, and it has been suggested that these are remains of an ancient port now submerged. It is much to be desired that this important archæological site should be thoroughly examined, and the suggestion that a committee of local geologists and archæologists should be formed for the purpose will meet with general approval. The local archæological and scientific societies might with advantage cooperate in the proposed inquiry.

A demand for a Royal Commission on the subject of venereal disease has been issued by the leaders of the medical profession. It is pointed out that the State has compelled local authorities to provide asylums for the insane, it has insisted on the notification of many infectious diseases, it has undertaken the inspection of school children, it has introduced an elaborate system to ensure the purity of food, and is building up a vast system of public health legislation. Yet the subject of venereal disease has been left severely alone. In London alone the disease claims 40,000 new victims every year, innocent members of the public are sometimes infected, it is transmissible from the parent to the offspring, and the effects of the disease are dire and widespread.

A committee, including the names of Sir H. Read, Profs. Haverfield, Ridgeway, and Dr. M. R. James, provost of King's College, Cambridge, has issued an appeal for funds to be devoted to the excavation of the Romano-British city of Wroxeter, which stands beside the Severn, five miles east of Shrewsbury. In its first phase it was a legionary post intended to watch the Welsh hills; but on the removal of the Roman troops to Chester there sprang up on the site a Romano-British town, which flourished for some three centuries, and became the capital of the Canton of the Cornovii. The city was laid out like Caerwent and Silchester, in Roman fashion, with a forum and baths, and streets crossing at right angles; but the area within its walls was more spacious than Silchester and Caerwent together. At the close of the Roman period it was destroyed by barbarian invaders, and since then has remained practically undisturbed. The excavation promises to throw much light on the later Roman period. The work will be carried on by an experienced archæologist, Mr. J. P. Bushe-Fox, with the aid of Oxford and Cambridge scholars. The scheme may be confidently recommended to the liberality of English antiquaries.

The Secretary of State for the Colonies has nominated a Committee to report:—(1) Upon the present knowledge available on the questions of the parts played by wild animals and tsetse-flies in Africa in the maintenance and spread of trypanosome infections of man and stock; (2) whether it is necessary and feasible to carry out an experiment of game destruction in a localised area in order to gain further knowledge on these questions, and, if so, to decide the locality, probable cost, and other details of such an experiment, and to provide a scheme for its conduct; (3) whether it is advisable to attempt the extermination of wild animals, either generally or locally, with the view of checking the trypanosome diseases of man and stock; (4) whether any other measures should be taken in order to obtain means of controlling these diseases. The Committee is constituted as follows:—Lord Desart (chairman), Mr. E. E. Austen, Dr. A. G. Bagshawe, Dr. Andrew Balfour, Sir John R. Bradford, F.R.S., Mr. E. North Buxton, Dr. W. A. Chapple, M.P., Sir Mackenzie D. Chalmers, Lieut.-Col. Sir W. B. Leishman, F.R.S., Sir Edmund G. Loder, Dr. C. J. Martin, F.R.S., Mr. J. Duncan Miller, M.P., Dr. P. Chalmers Mitchell, F.R.S., Prof. R. Newstead, F.R.S., Mr. H. J. Read, the Hon. L. Walter Rothschild, F.R.S., and Sir Stewart Stockman. Mr. A. C. C. Parkinson, of the Colonial Office, will act as secretary.

In the House of Commons on July 24 Mr. Runciman was able to give a very satisfactory account of the work of the Board of Agriculture during the past session. Energetic steps have been taken to stamp out animal disease, and the result is that the country is now freer from disease than any other in Europe. For a time last year there were outbreaks, and the export of pedigree live-stock ceased, but the foreign ports are now open to us again, and the result has been an unprecedented export during June, the total value of the animals sold being nearly 62,000*l*., against 28,000*l.*, the highest previously reached. Arrangements have been made for research on agricultural subjects to be carried on at a number of centres, including Rothamsted, Manchester, Birmingham, Oxford, Cambridge, the Royal Veterinary College, Leeds, Wye, Bristol, and Kew, and grants amounting to 20,000*l.* a year have been made for the purpose. In addition, 3900*l.* has been given for special investigations lying outside the scope of the programme of the special institutes. All these investigations have reference to the great fundamental problems lying at the root of the agricultural and horticultural work of the country; the work is wholly scientific. In order to bring the scientific results into the region of practical farming a number of advisers have been set up whose function it is to advise farmers or county organisers in the light of the results of the scientific knowledge that is gained. A grant of 9000*l.* per annum has been made towards the salaries of these advisers.

Now that we are at the end of the second month of summer some anxiety is being felt as to the general character of the weather to be experienced during August. June was a fair month with a generally deficient rainfall, but the conditions were mostly seasonable. July has had many shortcomings. During the early part of the month the weather was very unsettled, and the rainfall in the first three weeks was equal to the average for the whole of July except in parts of the Midlands and in the south-west of England. The special feature of the weather has been the persistent absence of bright sunshine and the consequent low day temperatures. At Greenwich there were only eight days to July 28 with a temperature of 70° or above, and there was only one day in the four weeks with the maximum day temperature above the average, the highest reading during the period being 76°. In July, 1910, the maximum temperature for the month was 76°, and in 1888 July had no higher reading than 74°. According to the average of the past seventy years July has twenty-two days with a temperature of 70° or above. The aggregate sunshine at Greenwich to July 27 is sixty-six hours, and the least sunshine for July previously since sunshine records were established, rather more than thirty years ago, is ninety-six hours in 1888, the next lowest record in July being 113 hours in 1910. July this year bids fair to be the least sunny July on record. There were only four days to July 27 with more than five hours' sunshine, whilst in 1911 July had twenty days with more than ten hours' sunshine, and the total duration for the month was 335 hours at Greenwich.

THE Institute of Metals will hold its first foreign meeting on August 28 and 29 at Ghent. Prof. A. K. Huntington will preside. The congress will commence with an official welcome of the members on behalf of the University and the municipality of Ghent. A number of important scientific papers will be read and discussed. The second report to the corrosion committee by Dr. G. D. Bengough and Mr. R. Jones will be presented. The report indicates not only the causes of the corrosion of condenser tubes, but how such corrosion may be eliminated. Among the papers arranged for the meeting the following may be mentioned:—Mr. H. Garland, "Metallographical Researches on Egyptian Metal Antiquities"; Dr. W. M. Guertler (Berlin), "The Specific Volume and Constitution of Alloys"; Prof. S. L. Hoyt (University of Minneapolis), "Copper Rich Alloys"; Dr. T. K. Rose, "The Annealing of Gold"; Dr. W. Rosenhain, F.R.S., and Mr. D. Ewen, "The Intercrystalline Cohesion of Metals—Second Paper"; Mr. J. H. Chamberlain, "A Further Study of Volume Changes in Alloys"; Dr. C. H. Desch and Mr. S. Whyte, "The Micro-Chemistry of Corrosion: I., Some Copper-Zinc Alloys"; Mr. F. Johnson, "A Method of Improving the Quality of Arsenical Copper"; Prof. A. A. Read, "The Influence of Phosphorus on Some Copper-Aluminium Alloys"; and Mr. T. West, "The Determination of Oxygen in Copper and Brass." Visits will be paid to factories of importance, and numerous social functions have been arranged. Those who desire to attend the meeting should communicate with the secretary of the Institute of Metals, Mr. G. Shaw Scott, Caxton House, Westminster, S.W.

THE Brighton meeting of the British Medical Association was held on July 22–26, the scientific business being conducted in sixteen sections. Among these the majority was of purely technical interest, all important problems of medical practice in its various branches having been ventilated. The section of State medicine dealt with questions regarding the Insurance Act, the importation of disease into seaports, school hygiene, and popular education in hygiene. The section of medical sociology held discussions on eugenics (Dr. E. Schuster, Dr. J. Scott, and many others), on hospitals in relation to State, public, and medical profession (Prof. B. Moore, Mr. C. F. Masterman, M.P., and various authorities, including foreign guests). Questions of general scientific interest were raised and discussed in the sections of medicine (the internal secretion in disease, by Prof. G. R. Murray), the section of electro-therapeutics (on secondary X-ray radiations in medicine, by Prof. C. G. Barkla, F.R.S.), the section of bacteriology and pathology (general pathological, experimental, bacteriological, and clinical aspects of anaphylaxis, by Profs. W. G. Dixon and G. Sims Woodhead, and Drs. Thiele, Embleton, G. W. Goodall, and H. H. Dale), the section of neurology and psychological medicine (discussion on sleep and sleeplessness, by Sir George Savage and others), and the section of tropical medicine (discussion on filariasis, by Dr. G. Low and others). We hope next week to give a descriptive article dealing in more detail with some of these discussions of general importance. The Brighton meeting was very largely attended, and was a great success in spite of the International Congress of Medicine to be held in London next week.

ON account of the deadlock reached by the Committee of the House of Commons considering the Dogs (Protection) Bill, referred to last week (p. 536), it was decided at the meeting of the Committee on July 23 not to proceed with the Bill. The question of the exclusion of dogs as subjects of all experiments in this country—not only experiments under anæsthetics, but all inoculations—has given rise to an interesting correspondence in *The Times.* Mr. John Galsworthy urged that the affectionate relationship existing between the dog and man gave dogs claims to consideration over those possessed by other animals. But, as Mr. Stephen Paget pointed out, 30,000 dogs are put to death annually at the Battersea Home for Lost Dogs, whereas the total number used for experiments of all kinds in Great Britain and Ireland is only 500. Nothing can be learned, nothing can be gained, by the killing of these 30,000 dogs; and they suffer neither more nor less than dogs anæsthetised for an experiment and killed under the anæsthetic. The physiologist is so often pictured as a man who has no tender or sentimental feelings that a letter from Sir E. A. Schäfer, published in *The Times* of July 26, is particularly appropriate to the discussion. Sir E. A. Schäfer is not prepared to let Mr. Galsworthy have it all his own way in the matter of ethics and sentiment. He says:—"I also love my dog even more, I confess, than many of my own kind. If the question arose of sacrificing my dog to save my own life I might hesitate. But if it were a question of choosing between the life of my dog and that of my wife, or child, or friend; nay, even between the life of any man, woman, or child—were it the meanest beggar in the street—and that of my dog, I should not hesitate to sacrifice the dog. This I would do—and I believe Mr. Galsworthy also would do the same—to save even a single human life. And when I consider that the employment of a few uncared-for animals, which would otherwise have been uselessly sacrificed for the mere sake of getting rid of them, has been the means of saving the lives and mitigating the sufferings of many thousands of our fellow-beings, it seems to me to be beyond a doubt that both ethics and sentiment are on the side of science."

THE *Scientific American* for June 14 contains an illustrated article by Dr. Bolduan entitled "Bacteriology and Your Health," in which antitoxins and other curative serums, vaccine treatment, and bacteriological methods for the diagnosis of disease conditions are dealt with in a popular manner.

To Vol. xxxv., No. 2, of Notes from the Leyden Museum Mr. R. Van Eecke communicates an article, illustrated by four plates, on variation in the beautiful "long-tailed" Indo-Malay butterfly, *Actias maenas,* of the family Saturniidæ. Four varieties, or races, are indicated, which exhibit a complete transition in the matter of colouring from dark-brown to greenish-yellow, the females of one race being more advanced in this respect than the males. In Java the females, which differ markedly from the males, are more numerous than the latter, whereas in Celebes the reverse of this condition obtains.

IN connection with experiments to find parasites capable of successfully combating the spread of the gipsy moth, the Entomological Bureau of the U.S. Department of Agriculture has issued a pamphlet, by Mr. P. H. Timberlake, on the life-history of *Limnerium validum,* an hymenopterous parasite normally attacking the fall web-worm (*Hyphantria cunea*). This parasite will attack caterpillars of the brown-tail and gipsy moths, as well as the tent-caterpillar, but will only undergo its full transformation, and then but seldom, in the last. It is, therefore, a failure in the matter of checking the gipsy moth.

FROM the Imperial Department of Agriculture for the West Indies we have received a copy of a pamphlet on the insect pests of the Lesser Antilles, by Mr. H. A. Ballon. The work, which is well illustrated, describes in popular language the chief species of insects, mites, and ticks injurious to plants and animals. It is interesting to note that, with the great increase of cotton-growing which has taken place of late years in the West Indies, "insects which were not previously recognised as pests, and in some cases even were not known to science, have assumed an important position as serious pests."

IN a report on calf-feeding experiments (North of Scotland College of Agriculture, Bulletin 17), Prof. Hendrick discusses the use of separated milk and oils as substitutes for whole milk. The data obtained from three series of experiments show that separated milk with either cod liver oil or cottonseed oil may be substituted for whole milk with good results. The average cost per pound of increase was found to be 1·83, 1·85, and 4·77 pence respectively up to the time of weaning, and both in regard to health and quality of carcase at the age of two years, the different sets of animals were indistinguishable. Although the stock which received whole milk were slightly heavier than those fed on substitutes, this difference was not great, and would be more than counterbalanced by the reduced cost of rearing.

IN the current number of *Bedrock,* Prof. Punnett replies to Prof. Poulton's article on mimicry, mutation, and Mendelism, which appeared in the April number of that publication. The main point of difference between the two writers is stated by the former to be concerned with "the conception of the function of natural selection with regard to these [mimetic] resemblances." "Both of us," he says, "are agreed as to the reality of natural selection," but while Prof. Poulton believes in the establishment of mimetic resemblance by the accumulation of small variations, Prof. Punnett holds that the mimicking form has in all cases suddenly arisen as a definite "mutation." This mimetic form, he allows in theory though apparently not in concrete instances, may when once produced be "conserved" by natural selection. To Prof. Poulton's argument from the existence of transitional forms, as in the females of *Papilio dardanus,* Prof. Punnett replies that apparently continuous transitional series may occur in cases of strict Mendelian inheritance.

THE Buenos Aires *Handels-Zeitung* (No. 1297) of May 3 discusses the recent discoveries of petroleum in the northern districts of Argentina, and reports the presence there of oil-bearing horizons for a distance north and south of 300 kilometres, and beside a series of moderately inclined anticlinals. This discovery is the more valuable as analyses show that the petroleum is rich in light illuminating oils, whereas that previously found in the Argentine Patagonia is rich in heavy oils. The article discusses the geological relations of the oil-fields; it points out that those in Patagonia are connected with great transcontinental fracture lines. The northern oil-fields are connected with the middle part of the South American Pacific coast, which is dominated by the great subsidence that causes the sudden change in the course of the coast near Arica. The author of the article connects this subsidence to the antipodal disturbance of the western coast of the Pacific on the Gulf of Tongking.

Though it had long been known that sudden displacements take place during strong earthquakes, the first case in which such displacements were established by geodetic measurements was that of the Sumatra earthquake of May 17, 1892. The movements of the crust were then entirely horizontal. Though no trace of any fault is visible at the surface, Prof. H. F. Reid shows (Bulletin of the Seis. Soc. of America, vol. iii., pp. 72–9) that the measured displacements imply the existence of a fault trending N.N.W. and S.S.E., and that the crust on the west side was shifted towards the north, and that on the east side towards the south. The total relative slip of the two walls of the fault amounted to 3½ or 4 metres, or about the same as that of the San Andreas fault during the Californian earthquake of 1906. As in that earthquake, also, the displacement diminished rapidly as the distance from the fault increased. Judging from the great displacements at the limits of the measured area (about 55 km. apart), Prof. Reid estimates that the ruptured part of the fault may have been from 150 to 200 km. in length.

In *Symons's Meteorological Magazine* for July Dr. Mill refers to the message recently received from Dr. Mawson at the winter camp of the Australian Antarctic Expedition and to the "interesting and remarkable fact" that daily meteorological reports are being received in Melbourne from Commonwealth Bay and from Macquarie Island. He remarks:—"No more striking advance in the study of world meteorology has ever been made than this inclusion of the Antarctic regions within the system of daily meteorological weather reports; and meteorologists must pay a tribute of gratitude to Dr. Mawson for his triumphant realisation of what, a very short time ago, would have been held to be a fantastic dream."

A pamphlet on the "Démonstration du théorème de Fermat," by Prof. E. Fabry (Paris: A. Hermann et Fils, price 1.50 francs), does not contain what its title seems to indicate. Assuming that all the details of the analysis are correct, the net conclusion is that if $x^p+y^p+z^p=0$, with p an odd prime, has an integral solution for which x, y, z, have no common factor, one of these integers must be divisible by p^2. But although this result is not much in itself, M. Fabry's tract deserves study, and may suggest some new way of attacking this famous problem. Another recent attempt by M. de Bouffall is of no value at all, as the author assumes that two equations are identical, when all that he has proved is that they have a common root.

The June number of the Proceedings of the American Academy of Arts and Sciences contains a contribution from Prof. B. Osgood Peirce, of the Jefferson Physical Laboratory of Harvard, on the maximum value of the magnetisation of iron. The recent measurements of Sir R. Hadfield and Prof. Hopkinson, by what is known as the "isthmus method," gave 1680 as the maximum. By building a large solenoid capable of giving a magnetic field of 5000 units, Prof. Peirce has been able to obviate the uncertainties which attach to the determinations of the magnetising field in the isthmus method, and has arrived at results for twenty-five examples of commercial iron which vary from 1735 for American ingot iron to 1533 for a sample of drill-rod iron. Curves are given for a number of these materials which all show how closely the reciprocal of the magnetic susceptibility of any specimen is a linear function of the magnetising field for fields above about 50 units.

Part 6 of each of the two sections—Physics and Electrical Engineering—of Science Abstracts has reached us. Each part extends to sixty-three pages, and the average length of an abstract in the Physics Section is one-third, and in the Electrical Engineering Section one-half, of a page. The engineering abstracts are in many cases accompanied by figures which are not invariably so clear as they might be. The greater length of these abstracts seems to be due to the descriptive details of apparatus and machinery on which the interest of the articles abstracted in many cases depends. So far as the dates of the articles abstracted are concerned, a glance through the two sections shows that the great bulk of them are of February, March, and April, so that the periodical is reasonably up to date. The Institution of Electrical Engineers and the Physical Society of London have earned the thanks of all workers in these two fields for their enterprise in maintaining so useful a publication.

The July number of *Science Progress* (No. 29) marks the commencement of a new volume, and a change of editorship. Sir Ronald Ross will in future guide the destinies of this well-known journal. The present number contains several articles of a wide general interest, of which the following may be named:—Enzymes as synthetic agents, by Prof. J. H. Priestley; the seats of the soul in history, by Dr. D. Fraser Harris; and scientific national defence, by Colonel Charles Ross. Drs. M. S. Pembery and O. A. Craggs cross swords on the vexed question of woman's place in nature, and Prof. H. E. Armstrong destructively criticises recent experimental work on the perennially interesting subject of the corrosion or rusting of iron, which, it is maintained, cannot possibly be brought about by the action of pure water and pure oxygen only.

In *The Biochemical Journal* (vol. vii., p. 268) Mr. E. Ashley Cooper describes the isolation from animal tissues, such as horseflesh, or ox-heart, of a substance which rapidly cures polyneuritis in birds induced by a diet of polished rice; it can be precipitated from the fats and lipoids present in an alcoholic extract of the tissue by means of ether, and, thus obtained, is extremely active. Ordinary quinine and cinchonine exert a temporary curative action upon birds affected with polyneuritis, but as this action is destroyed by heating the alkaloids at 125°, it is probable that the curative properties are due to the presence of traces of an anti-neuritic substance derived from the cinchona-bark, which is destroyed by this treatment. The same number of *The Biochemical Journal* also contains an account by Dr. R. H. A. Plimmer of a very useful method for quantitatively separating tyrosine from cystine by means of absolute alcohol saturated with hydrogen chloride, which converts the former into its ester, whilst the cystine does not undergo esterification.

OUR ASTRONOMICAL COLUMN.

ASTRONOMICAL OCCURRENCES FOR AUGUST :—

August 1. 1h. 44m. Neptune in conjunction with the Moon (Neptune 4° 59′ S.).
4. 0h. 0m. Mercury in inferior conjunction with the Sun.
12. 16h. 29m. Jupiter in conjunction with the Moon (Jupiter 4° 52′ N.).
14. 18h. 9m. Uranus in conjunction with the Moon (Uranus 3° 28′ N.).
22. 1h. 0m. Mercury at greatest elongation west of the Sun (18° 25′).
24. 5h. 23m. Mars in conjunction with Saturn (Mars 1° 9′ N.).
25. 18h. 54m. Saturn in conjunction with the Moon (Saturn 6° 53′ S.).
,, 20h. 29m. Mars in conjunction with the Moon (Mars 5° 43′ S.).
28. 11h. 43m. Venus in conjunction with the Moon (Venus 5° 25′ S.).
,, 13h. 38m. Neptune in conjunction with the Moon (Neptune 5° 0′ S.).
29. 12h. 38m. Venus in conjunction with Neptune (Venus 0° 18′ S.).
31. 8h. 52m. Sun eclipsed, invisible at Greenwich.

NOVA GEMINORUM NO. 2.—Among recent references to Nova Geminorum No. 2 may be mentioned a communication by Herr C. Wirtz (*Astronomische Nachrichten*, No. 4667, p. 219), who gives the values derived from his observations of its magnitude. The observations extended from March 14 to May 12 of last year, from the time when the star was about 3·5 mag. to that when it had diminished to about 7·0 mag.

Another communication in the same number of the *Astronomische Nachrichten*, by Mr. F. P. Leavenworth, gives the position of the nova from photographs taken at the University of Minnesota, the arithmetical mean of eleven observatory positions being given as—

R.A. 6h. 49m. 11·793s. Decl. +32° 15′ 5·65″.

Another excellent series of magnitude observations of this nova is one which appears in the *Memorie della Società degli Spettroscopisti Italiani* (disp. 6, vol. ii., ser. 2, p. 105), by Dr. E. Guerrieri, at the Royal Astronomical Observatory at Capodimonte. These observations cover the period March 28, 1912, to April 29, 1913, and are accompanied by a chart. The curve shows the curious fluctuations which the light of the nova was undergoing during its gradual diminution in brilliancy.

VARIATION OF LATITUDE.—No. 4665 of the *Astronomische Nachrichten*, p. 161, contains the provisional results of the International Latitude Service of the north parallel for the period 1912·0 to 1913·0, communicated by Prof. Th. Albrecht. The author states that the method for the determination of the path of the pole is the same as that employed in his previous publications, and he gives here the mean values of the latitude of the six stations according to group on which his values are based. In one table he shows the values of the variation in latitude, and in another the values of an expression from which the variations in azimuth and longitude can be computed for every 30° of longitude from 1912·0 to 1913·0. The paper is accompanied by a chart of the now well-known form showing the polar track from 1906·0 to 1913·0. During these years the amplitude is small at first and then increases up to 1911, afterwards decreasing rapidly up to the last-mentioned year.

THE INTENSITY DISTRIBUTION OF INDIVIDUAL LINES IN STELLAR SPECTRA.—Those familiar with the lines in the spectra of new stars know that at some stages of development the lines, such as those of hydrogen, have a complicated structure, the intensity distribution being very far from uniform. Herr K. F. Bottlinger has recently taken up the study of the question of the intensity distribution of lines in many of the type stars, and communicates his results to the *Astronomische Nachrichten*, No. 4662, p. 117. The spectra were secured at the Astrophysical Observatory at Potsdam, and measured with a Hartmann's microphotometer. The investigation chiefly consisted in the study of Hγ and a few other lines in the spectra of the following stars :—α Can. maj., α Cygni, η Leonis, ζ Orionis, δ Orionis, and γ Cassiopeiæ. The paper is accompanied by a series of curves showing the form of the distribution, and brings out the fact that a systematic study on a more extensive scale might lead to important conclusions.

RECENT WORK OF THE GEOLOGICAL SURVEY OF GREAT BRITAIN.

THE memoirs here referred to bear witness to the publishing activity of the Geological Survey during 1912 and the present year. In explanation of Sheet 299, H. J. O. White describes the country around Winchester and Stockbridge (1*s.* 6*d.*), where the broad stretch of chalk is cut by the valley of the Test. Though Crawley stands out isolated on its dome, few of our Upper Cretaceous areas show more clearly the dependence of the villages on permanent streams. It is interesting to notice that the pre-Eocene denudation of the Chalk has not entirely removed the zone of *Belemnitella mucronata* (p. 40). On the accompanying map, the unusual feature of knolls of calcareous tufa, some 5 or 6 ft. thick, is represented in the valleys of the Itchen and the Test.

The description of Devon and Cornwall is continued in three memoirs. Numerous authors are associated in "The Geology of Dartmoor" (2*s.* 3*d.*), accompanied by Sheet 338 of the one-inch map. The great mass of granite, penetrating Carboniferous strata, occupies almost all the area. Its upper surface probably lay at no time much above the present undulating surface of the moor. The Culm-Measure rocks on its margins are regarded as representing the Millstone Grit, and perhaps the higher zones of the Avonian Series. Chapter vii. directs attention to the probability that the valleys of the small streams, with a general north-westerly and south-easterly trend, are controlled by earth-fractures. The rapid deepening of the valleys